

AUSTRALIAN LEAF-HOPPERS.

PART 7.

STENOCOTIDAE.

By J. W. EVANS, M.A., F.R.E.S.

(Text-figure 1.)

The Stenocotidae comprise a family of leaf-hoppers that are confined to Australia. Although clearly related to the Ledridae, they differ from this family in several characters, of which the principal one concerns the venation of the tegmina. In the Stenocotidae the anal veins are invariably fused distally, so that a Y vein is formed, such as occurs in the Fulgoroidea. In some species, the second anal vein may terminate separately at the anal border, after junction with the first vein. The ocelli are variable in position and may be dorsal, marginal or ventral. Certain species have the frons separated into two areas, of which the anterior bears the impressions of the dilator muscles of the sucking-pump. As suggested elsewhere (Evans, 1936), these two areas probably represent the post-clypeus and the true frons.

The male genitalia are characterised by the possession of narrow sub-genital plates, short parameres and broad pygophores. The pygophores have long narrow styles that arise from close to their ventral borders. These styles are analogous with those of species in the genus *Eurymela* Le P. and Serv., but not homologous, as with the Eurymelinae the styles are processes of the sub-genital plates. The hind tibiae are also reminiscent of the Eurymelinae, in so far as the possession of a few large prominent spurs with apical spines is concerned. They differ in that the spurs are more flattened and in the possession of three rows of closely set spines.

The sexual dimorphism in the genera *Stenocotis* Stål and *Smicrocotis* Kirk. is striking, the sexes not only differing from each other in size and colour pattern, but also in detailed structure. On this account it is probable that considerable synonymy exists, which at the moment it is impossible to correct.

All the Stenocotidae are essentially arboreal insects, and are probably confined to Eucalyptus trees. Their peculiar flattened nymphs, which occur under bark, are more frequently found than the adults. In coloration various shades of brown predominate, and some species have the tegmina of the males more or less transparent.

The principal purpose of this paper is to enable the recognition of the genera. Until more material is available, of specimens of both sexes taken together, it will be impossible to re-describe the various species.

KEY TO THE GENERA OF THE STENOCOTIDAE.

- | | |
|---|---|
| 1. Head ventrally as wide as long | 2 |
| Head ventrally longer than wide | 4 |
| 2. Labium reaching well beyond hind coxae | 3 |
| Labium reaching to middle coxae | <i>Anacotis</i> gen. nov. |
| | Type <i>Anacotis hackeri</i> sp. nov. |
| 3. Ocelli marginal, in shallow oval depressions | <i>Stenocotis</i> Stål |
| | Type <i>Stenocotis planiscula</i> Stål |
| Ocelli ventral, in very shallow depressions | <i>Kyphocotis</i> Kirk. |
| | Type <i>Kyphocotis tessellata</i> Kirk. |
| 4. Ocelli marginal, directed ventrally | <i>Smicrocotis</i> Kirk. |
| | Type <i>Smicrocotis obscura</i> Kirk. |
| Ocelli dorsal | <i>Ledracotis</i> gen. nov. |
| | Type <i>Ledracotis rugosa</i> sp. nov. |

STENOCOTIS Stål.

Öfv. Vet-Ak. Förh. 11 ; 254, 1854.

Öfv. Vet-Ak. Förh. 13 ; 67, 1856.

The following species belong to this genus: *planiscula* Stål (Type), *subvittata* Stål (1854); *corticalis* Walk., *ferruginea* Walk., *depressa* Walk., *australis* Walk., *brevis* Walk., *varia* Walk., *conferta* Walk., *unicolor* Walk. (1851); *delineata* Walk. (1858); *dimorpha* Kirk., *reticulata* Kirk. (1907).

Stenocotis australis is synonymous with *S. brevis*, *S. subvittata*, *S. varia* and *S. delineata* with *S. depressa*, and *S. dimorpha* with *S. costatis*.

The male genitalia of a number of colour varieties have been examined, but have disclosed no significant differences, and although doubtless there are a number of distinct species within this genus, it is probable that they are fewer than the above list would suggest. Figures are given (Text-figure 1, figs. 1-6) of *Stenocotis depressa*, and a re-description of the genus follows.

♀, Head ventrally, flat anteriorly. The maxillary plates extend beyond the apex of the clypeus and the labium extends beyond the hind coxae. The antennal ledges are distinct and extend across the frontal suture. The hind margin of the frons is not defined and the vertex has a median longitudinal ridge. The ocelli, which are marginal, lie in shallow oval depressions, and the crown is wider in the centre than against the eyes on each side. The eyes are prominent.

The pronotum is transversely striated, produced anteriorly and narrow laterally. The propleurae separate the eyes from the bases of the tegmina. Posteriorly the pronotum is at a higher level than anteriorly. The scutellum is flat and transversely striated. The tegmina are brown, narrow apically and the veins are much branched apically. The hind tibiae have three rows of small spines and a row of six flattened spurs with apical spines, diminishing in size from the apex to the base. The first tarsal segment of the hind tibia is more than twice the length of either of the other tarsal segments.

♂, seven-tenths the length of the ♀.

The crown is only slightly wider medianly than laterally. The tegmina are largely transparent, brown or black basally and medianly, and have many less ante-apical cells than with the ♀. The body is usually black whilst that of the female may be light or dark brown.

SMICROCOTIS Kirk.

H.S.P.A. Exp. Sta. Bull. 1 (9) ; 370, 1906.

The following five species belong to this genus : *obscura* Kirk. (1906) (Type) *sidnica* Kirk. (1907) ; *pallescens* Dist., *infusata* Dist., *projecta* Dist. (1907) ; *claudenda* Walk. (1858). It is probable that *S. infusata* is synonymous with the genotype. Two new species are described below, a re-description is given of the genus, and figures of the genotype (figs. 7-9).

♀, The head ventrally is longer than wide and is recurved apically. The maxillary plates extend alongside and beyond the clypeus as narrow borders. The labium extends to the middle of the hind coxae and the antennal ledges which are indistinct reach only as far as the frontal sutures. The hind margin of the frons (or post-clypeus) is distinct and lies well forward of the apex of the head ; posterior to this the margin of the vertex (here doubtless the true frons), is raised into a median ridge. The ocelli which are marginal are directed ventrally. The crown of the head is produced anteriorly, the apical margin is straight or irregular and in some species the apex of the head is tilted dorsally. The eyes are not prominent.

The pronotum may be flat or raised, either anteriorly or posteriorly, and is transversely striated posteriorly. The tegmina which are an opaque brown are rounded apically and the veins are raised in relief. The hind tibiae in addition to three rows of small spines have a row of four flattened spurs bearing apical spines, these diminish in size from the apex to the base.

♂, seven-tenths the length of the ♀.

The hind margin of the frons (post-elypeus) is indistinct. The ocelli are ventral, lying above a transverse ridge, the apical margin of the head being ventrally flattened. The tegmina are largely transparent or hyaline, the veins black and white. The crown of the head is never produced medianly, and is either of equal width throughout or widest medianly or laterally.

SMICROCOTIS SOLOMONI sp. nov.

(Figs. 10, 11.)

Length, 7 mm. (from the apex of the head to the tip of the folded tegmina). *Head*, evenly convex, pale yellowish-brown mottled with black and reddish-brown; antennal pits black, ocelli on flattened ventral surface of head; suture between post-clypeus and frons distinct. Crown narrow, wider against the eyes on each side than in the middle, yellowish-white with reddish-brown markings. *Pronotum*, yellowish-white mottled with black and pale orange-brown. *Scutellum*, pale yellowish-brown. *Tegmen*, whitish-hyaline with irregular scattered brownish-black areas; veins brown with raised white spots. *Thorax* and *abdomen*, ventral surface and legs, black with pale brown markings. Hind tibia with six distinct spurs diminishing in size from the apex of the tibia to the base, and in addition two rows of prominent spines and a row of smaller closely-set spines. Sub-genital plates short.

Type ♂, from Crawley, Western Australia (coll. M. E. Solomon), in the collection of the Queensland Museum. Reg. No. 5209.

SMICROCOTIS CHELONIA sp. nov.

(Fig. 12.)

Length, 8 mm. *Head*, ventrally marked with an irregular and evenly distributed pattern of black and yellow; ocelli on the vertical margin of the vertex, not visible from above; crown broad, wider medianly than against the eyes on each side, marked with an irregular pattern of black and yellow. *Pronotum* and *scutellum*, concolorous with the head. *Tegmen*, hyaline yellowish-grey or entirely black, veins dark brown with whitish spots; the whole tegmen covered with a sparse pubescence. *Thorax*, ventral surface, black with yellow markings. *Legs* marked with a pattern of reddish-brown and black. *Abdomen*, black. Hind tibia with eight spurs diminishing in size from the apex of the tibia to the base.

Type ♂, from National Park, Tasmania, 3,500 ft. (coll. F. E. Wilson), in the collection of the Queensland Museum.

KYPHOCOTIS Kirk.

H.S.P.A. Exp. Sta. Bull. 1 (9) ; 370, 1906.

Four described species belong to this genus : *tessellata* Kirk. (1906, 07) (Type) ; *fasciata* Dist., *parva* Dist., *nigrescens* Dist. (1907). It is probable that *K. parva* is synonymous with the genotype.

Although as with other genera the sexes differ from each other in size, they resemble each other in colour pattern and can be readily correlated. Kirkaldy in describing this genus cites only one character, which concerns the scutellum : " The posterior three-fifths of the scutellum are elevated in a narrow acute crest." This character is only of specific value, since species occur which are obviously congeneric with the genotype, yet have the scutellum flat. A re-description of the genus follows.

♀, The head ventrally is flat anteriorly and the maxillary plates extend alongside but not beyond the clypeus. The antennal ledges are distinct and terminate at the frontal sutures. The hind margin of the frons which is barely perceptible, lies well forward of the apex of the head and the vertex has a slight median longitudinal ridge. The crown of the head is of even width throughout and the eyes are prominent. The pronotum is raised posteriorly, and the posterior half is transversely striated, the postero-lateral angles are raised into one or two short rounded ridges. The scutellum which is transversely striated is flat, or raised posteriorly into a hump of variable elevation. The tegmina which are rounded apically and have the veins raised in relief, are an opaque brown or grey. The hind tibiae have three rows of small spines and a row of five flattened spurs.

♂, seven-tenths the length of the ♀.

The tegmina are largely transparent and narrow apically.

ANACOTIS gen. nov.

The head is flat anteriorly, and the maxillary plates extend alongside and beyond the apex of the clypeus, and the labium reaches as far as the middle coxae. The antennal ledges are distinct and extend across the frontal sutures, the two ridges meeting medianly on the frons ; anterior to their junction the frons is slightly raised, posteriorly it is depressed, with a median longitudinal ridge. The crown of the head is wider medianly than laterally, the apical margin is uneven, and the ocelli lie well away from the apical border on the sides of outwardly facing ridges. The eyes are prominent. The pronotum and scutellum are transversely striated, the latter being raised into a low hump posteriorly. The tegmina narrow apically and the radius is many-branched. The fore and middle femora are flattened and the hind tibiae have three rows of short spines and one row of eleven flattened spurs. The sub-genital plates are short and narrow, not extending as far as the apex of the pygophores. (In *Stenocotis* the sub-genital plates extend well past the pygophores.)

ANACOTIS HACKERI sp. nov.

(Figs. 16, 17.)

Length, 12 mm. *Head*, ventral surface, labium stramineous; clypeus, maxillary plates, lorae and frons anteriorly black, posteriorly stramineous; vertex black, crown pale brown. *Pronotum*, pale brown with narrow dark brown markings. *Scutellum*, pale brown, transversely striated. *Tegmen*, transparent but for the costal margin which is pale brown and the costal and anal areas proximally, which are suffused with yellowish-brown. *Thorax* and *abdomen*, ventral surface marked with a pattern of light and dark brown.

Type ♂ from Brisbane, Queensland (coll. H. Haeker), in the collection of the Queensland Museum.

LEDACOTIS gen. nov.

The head is flattened anteriorly, the maxillary plates extending alongside and beyond the apex of the clypeus and the labium reaches as far as the hind coxae. The antennal ridges are prominent and extend across the frontal sutures. Dorsally the head has a median trough-shaped depression, the crown is produced anteriorly and the ocelli are on the sides of ridges and face outwards and forwards.

The pronotum is evenly convex, very wide laterally, and the propleurae widely separate the eyes from the bases of the antennae. The scutellum is flat and transversely striated. The tegmina narrow apically and the hind tibiae in addition to three rows of small spines have a row of six flattened spurs decreasing in size from the apex to the base.

LEDACOTIS GUNNENSIS sp. nov.

(Figs. 18, 19.)

Length, 15 mm. *Head*, ventrally deep chocolate-brown; frons punctate, lorae, maxillary plates and vertex, rugose. Dorsally rugose, reddish-brown with a median black longitudinal stripe; ocelli orange. *Pronotum*, transversely striated, reddish-brown mottled with black. *Scutellum*, rugose, marked with a pattern of brown and black. *Tegmen*, pale brown, the veins a somewhat darker brown, and the whole tegmen covered with a sparse pubescence. *Thorax*, ventral surface marked with a pattern of dark brown and black. *Abdomen*, the two proximal segments black, the remainder, dark brown.

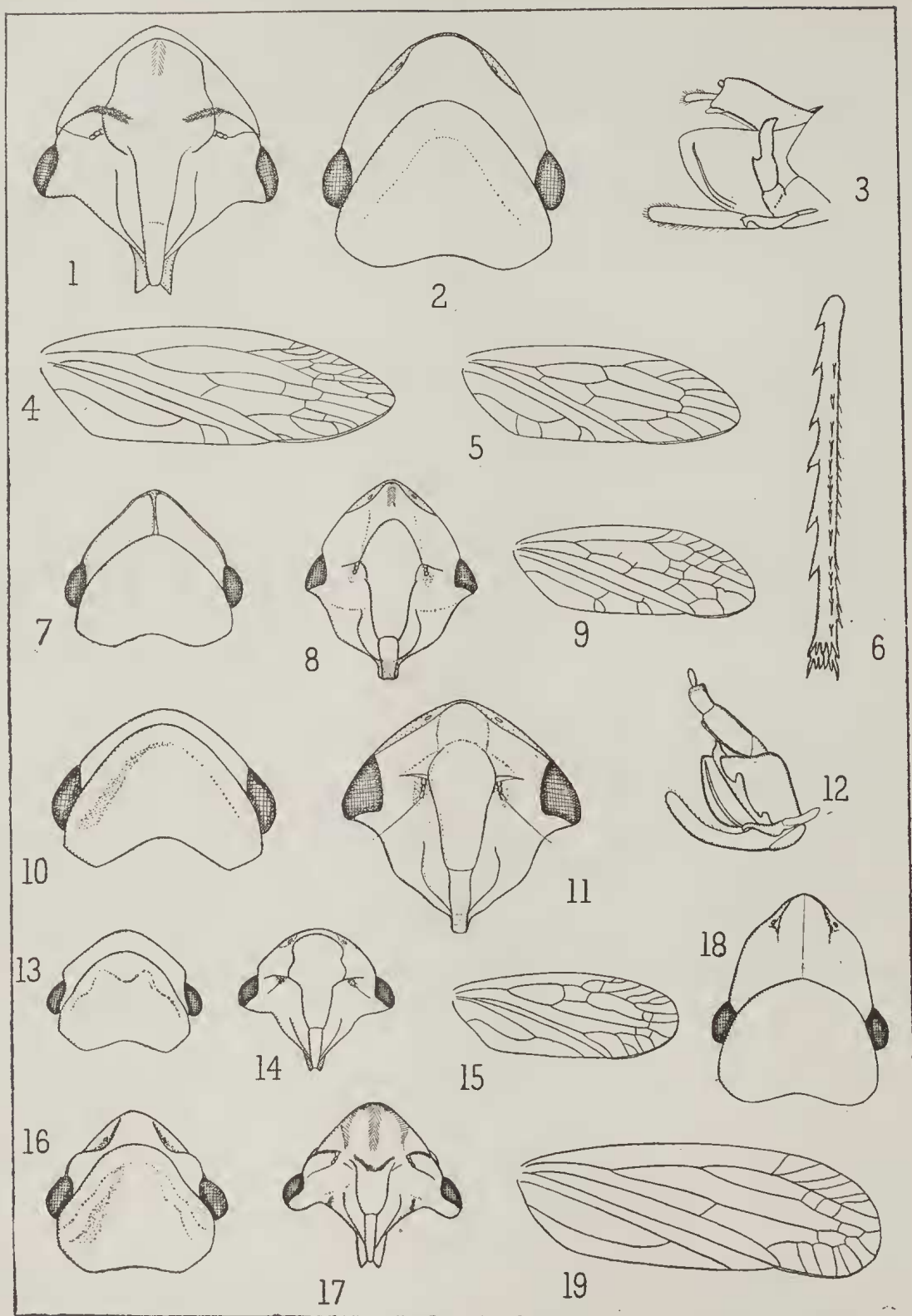
Type ♀, from Gunning, New South Wales, in the collection of the Macleay Museum, University of Sydney.

REFERENCES.

- | | | | |
|-----------------|----|----|---|
| Distant, W. L. | .. | .. | 1907, Ann. Soc. Ent. Belg. 51, 196. |
| Evans, J. W. | .. | .. | 1936, Papers and Proc. Roy. Soc. Tas. |
| Kirkaldy, G. W. | .. | .. | 1906, H.S.P.A. Exp. Sta. Bull. 1 (9). |
| Kirkaldy, G. W. | .. | .. | 1907, H.S.P.A. Exp. Sta. Bull. 3. |
| Stål, C. | .. | .. | 1854, Öfv. Vet-Ak. Förh. 11; 254, 1854. |
| Walker, F. | .. | .. | 1851, List Homopt. III. |
| Walker, F. | .. | .. | 1858, Supplement. |

TEXT-FIGURE 1.

- Fig. 1. *Stenocotis depressa*, ♀, Head, ventral aspect.
Fig. 2. *Stenocotis depressa*, ♀, Head and pronotum, dorsal aspect.
Fig. 3. *Stenocotis depressa*, Male Genitalia.
Fig. 4. *Stenocotis depressa*, ♀, Tegmen.
Fig. 5. *Stenocotis depressa*, ♂ Tegmen.
Fig. 6. *Stenocotis depressa*, ♀ Hind tibia.
Fig. 7. *Smicrocotis obscura*, ♀, Head and pronotum, dorsal aspect.
Fig. 8. *Smicrocotis obscura*, ♀, Head, ventral aspect.
Fig. 9. *Smicrocotis obscura*, ♀, Tegmen.
Fig. 10. *Smicrocotis solomoni*, ♂, Head and pronotum, dorsal aspect.
Fig. 11. *Smicrocotis solomoni*, ♂, Head, ventral aspect.
Fig. 12. *Smicrocotis chlonia*, Male Genitalia.
Fig. 13. *Kyphocotis tessellata*, ♀, Head and pronotum, dorsal aspect.
Fig. 14. *Kyphocotis tessellata*, ♀, Head, ventral aspect.
Fig. 15. *Kyphocotis tessellata*, ♀, Tegmen.
Fig. 16. *Anacotis hackeri*, ♂, Head and pronotum, dorsal aspect.
Fig. 17. *Anacotis hackeri*, ♂, Head, ventral aspect.
Fig. 18. *Ledracotis gunnensis*, ♀, Head and pronotum, dorsal aspect.
Fig. 19. *Ledracotis gunnensis*, ♀, Tegmen.

*Stenocotidae.* Text-figure 1.